Amendments to the Claims:

1. (Currently Amended) A composition consisting essentially of a *Helicobacter pylori* membrane ~~fraction~~ protein in a form that is ~~pharmaceutically~~ acceptable for administration to humans ~~form~~, wherein said protein has a molecular weight ~~that appears to be~~ of the order of 50, 32-35, or 30 kDa ~~after electrophoresis on a 10% polyacrylamide gel in the presence of SDS~~.

2. (Canceled).

3. (Currently Amended) The composition of claim 1, wherein the ~~apparent~~ molecular weight of the protein is of the order of 50 kDa and the protein is obtainable by a process comprising the steps of ~~in which~~:

(i) extracting *H. pylori* bacteria ~~are extracted~~ with 1% n-octyl β-D glucopyranoside, followed by centrifugation to generate a bacterial pellet;

(ii) recovering said ~~a~~ bacterial pellet ~~is recovered~~ and treating it ~~is treated~~ with lysozyme, followed by ~~and subjected to~~ sonication, and then ~~followed by~~ centrifugation to generate a centrifugation pellet;

(iii) recovering said ~~a~~ centrifugation pellet ~~is recovered~~ and ~~it is subjected to~~ washing it with 20 mM Tris-HCl buffer pH 7.5, followed by centrifugation to generate a membrane fraction pellet;

(iv) recovering the membrane fraction ~~consisting of the centrifugation~~ pellet ~~is recovered~~ and resuspending it ~~is resuspended~~ in aqueous medium to generate a membrane fraction;

(v) subjecting the membrane fraction ~~is subjected~~ to an anion-exchange chromatography on a Q-Sepharose column in a 0-0.5 M NaCl gradient, followed by washing in 1 M NaCl;

(vi) recovering the fraction eluted at the start of washing in 1 M NaCl and subjecting ~~is recovered and~~ it ~~is subjected~~ to an anion-exchange chromatography on a DEAE-Sepharose column, in a 0-0.5 M NaCl gradient; and

(vii) recovering the fraction eluted in 0.3-0.4 M NaCl ~~is recovered~~.

4. (Previously Presented) The composition of claim 3, wherein the protein has as N-terminal sequence the amino acid sequence as shown in SEQ ID NO:1.

5. (Currently Amended) The composition of claim 1, wherein the ~~apparent~~ molecular weight of the protein is of the order of 30 kDa and the protein is obtainable by a process comprising the steps of ~~in which~~:

(i) extracting *H. pylori* bacteria ~~are extracted~~ with 1% n-octyl β-D glucopyranoside, followed by centrifugation to generate a bacterial pellet;

(ii) recovering said ~~a~~ bacterial pellet ~~is recovered~~ and treating it ~~is treated~~ with lysozyme, followed by ~~and subjected to~~ sonication, and then ~~followed by~~ centrifugation to generate a centrifugation pellet;

(iii) recovering said ~~a~~ centrifugation pellet ~~is recovered~~ and ~~it is subjected to~~ washing it with 20 mM Tris-HCl buffer pH 7.5, followed by centrifugation to generate a membrane fraction pellet;

(iv) recovering said ~~the~~ membrane fraction ~~consisting of the centrifugation~~ pellet ~~is recovered~~ and resuspending it ~~is resuspended~~ in aqueous medium to generate a membrane fraction;

(v) subjecting the membrane fraction ~~is subjected~~ to an anion-exchange chromatography on a Q-Sepharose column in a 0-0.5 M NaCl gradient;

vi) recovering the fraction eluted in 0.28-0.35 M NaCl ~~is recovered~~ and subjecting it ~~is subjected~~ to an anion-exchange chromatography on a DEAE-Sepharose column, in a 0-0.5 M NaCl gradient; and

(vii) recovering the fraction corresponding to the direct eluate ~~is recovered~~ (absence of NaCl).

6. (Currently Amended) The composition of claim 1, wherein the ~~apparent~~ molecular weight of the protein is of the order of 32-35 kDa and the protein is obtainable by a process comprising the steps of ~~in which~~:

(i) extracting *H. pylori* bacteria ~~are extracted~~ with 1% n-octyl β-D glucopyranoside, followed by centrifugation to generate a bacterial pellet;

(ii) recovering said ~~a~~ bacterial pellet ~~is recovered~~ and treating it ~~is treated~~ with lysozyme, followed by ~~and subjected to~~ sonication, and then ~~followed by~~ centrifugation to generate a centrifugation pellet;

(iii) recovering said ~~a~~ centrifugation pellet ~~is recovered~~ and ~~it is subjected to~~ washing it with 20 mM Tris-HCl buffer pH 7.5, followed by centrifugation to generate a membrane fraction pellet;

(iv) recovering the membrane fraction ~~consisting of the centrifugation~~ pellet ~~is recovered~~ and resuspending it ~~is resuspended~~ in aqueous medium, advantageously in carbonate buffer pH 9.5, to generate a suspension;

(v) subjecting the suspension obtained in (iv) to centrifugation ~~is centrifuged~~ at about 200,000 x g and recovering the supernatant ~~is recovered~~;

(vi) reducing the pH of the supernatant obtained in (v) ~~is reduced~~ to about pH 7, advantageously by dialysing against phosphate buffer pH 7;

(vii) subjecting the preparation obtained in (vi) ~~is subjected~~ to a cation-exchange chromatography on an SP-Sepharose column in a 0 - 0.5 M NaCl gradient, advantageously in a phosphate buffer pH 7; and

(vii) recovering the fraction eluted in 0.26 - 0.31 M NaCl ~~is recovered~~.

7. (Previously Presented) A Helicobacter protein, or a polypeptide that is derived from the protein by fragmentation, in a substantially purified form, which is recognized by an antiserum raised against the protein of the composition of claim 1.

8 and 9. (Canceled).

10. (Previously Presented) A composition consisting essentially of a monospecific antibody that recognizes the protein of the composition of claim 1.

11. (Previously Presented) A composition consisting essentially of a monospecific antibody that recognizes the protein or polypeptide of claim 7.

12 and 13. (Canceled).

14. (Currently Amended) A diagnostic method for detecting the presence of Helicobacter in a biological sample comprising polypeptides or peptides, ~~according to~~ which comprises bringing the biological sample ~~is brought~~ into contact with the antibody of claim 10 so that an immune complex forms, removing the unbound material ~~is removed~~, and detecting the immune complex formed between polypeptides or peptides of the sample and the antibody ~~is detected~~.

15. (Currently Amended) A diagnostic method for detecting the presence of antibodies to Helicobacter in a biological sample comprising antibodies, ~~according to~~ which comprises bringing the biological sample ~~is brought~~ into contact with the protein or polypeptide of claim 1 or claim 7 so that an immune complex forms, removing the unbound material ~~is removed~~, and detecting the immune complex formed between antibodies of the sample and the protein or polypeptide ~~is detected~~.

16. (Currently Amended) A process for the purification of the protein of the composition of claim 1 from a biological sample, ~~according to~~ which comprises subjecting the biological sample ~~is subjected~~ to affinity chromatography using a monospecific antibody that recognizes said protein or polypeptide, and eluting said protein from said monospecific antibody.

17. (Currently Amended) An isolated immunogenic polypeptide fragment of the protein of the composition of claim 1.

18. (Currently Amended) A ~~The~~ composition ~~of claim 1, further~~ consisting essentially of (i) a *Helicobacter pylori* protein in a form that is acceptable for administration to humans, wherein said protein has a molecular weight on the order of 50, 32-35, or 30 kDa, and (ii) an adjuvant.

19. (Currently Amended) A ~~The~~ composition ~~of claim 1, further~~ consisting essentially of (i) a *Helicobacter pylori* protein in a pharmaceutically acceptable form, wherein said protein has a molecular weight on the order of 50, 32-35, or 30 kDa, and (ii) an additional Helicobacter polypeptide antigen.

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20. (Currently Amended) The composition of claim 19, wherein the additional Helicobacter polypeptide antigen is ~~comprises~~ a Helicobacter urease, or an antigenic ~~immunogenic~~ subunit or fragment thereof.

21. (Withdrawn) The composition of claim 1, further consisting essentially of a Helicobacter urease, VacA, CagA/TagA, HspA, HspB, catalase, Hpa, Hpn, HopA, HopB, HopC, HopD, or an immunogenic subunit, fragment, or combination of any of these antigens.

22. (Currently Amended) The composition of claim 1, wherein said Helicobacter membrane ~~fraction~~ protein has a molecular weight ~~that appears~~ on the order of 50 kDa ~~after electrophoresis on a 10% polyacrylamide gel in the presence of SDS~~.

23. (Currently Amended) The composition of claim 1, wherein said Helicobacter membrane ~~fraction~~ protein has a molecular weight ~~that appears~~ on the order of 32-35 kDa ~~after electrophoresis on a 10% polyacrylamide gel in the presence of SDS~~.

24. (Currently Amended) The composition of claim 1, wherein said Helicobacter membrane ~~fraction~~ protein has a molecular weight ~~that appears~~ on the order of 30 kDa ~~after electrophoresis on a 10% polyacrylamide gel in the presence of SDS~~.

D2

25. (Withdrawn) A method of preparing a pharmaceutical composition, said method comprising combining the composition of claim 1 with an additional Helicobacter antigen.

26. (Withdrawn) A method of preparing a pharmaceutical composition, said method comprising combining the composition of claim 1 with an adjuvant.

27. (Withdrawn) A method of preparing a pharmaceutical composition, said method comprising combining the composition of claim 1 with pharmaceutically acceptable carrier or diluent.

28. (Currently Amended) A composition consisting essentially of a *Helicobacter pylori* protein in a form that is ~~pharmaceutically~~ acceptable for administration to humans ~~form~~, wherein said protein has a molecular weight ~~that appears to be~~ of the order of 50, 32-35, or 30 kDa ~~after electrophoresis on a 10% polyacrylamide gel in the presence of SDS~~.

29. (Previously Amended) A composition consisting essentially of (i) a *Helicobacter pylori* protein having a molecular weight ~~that appears to be~~ of the order of 54 kDa ~~after electrophoresis on a 10% polyacrylamide gel in the presence of SDS,~~ and (ii) an additional Helicobacter polypeptide antigen, wherein said protein and said additional Helicobacter polypeptide antigen are in a form that is acceptable for administration to humans.

30. (Canceled).

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31. (Withdrawn) A method of preparing a pharmaceutical composition, said method comprising combining a composition consisting essentially of a *Helicobacter pylori* protein having a molecular weight that appears to be of the order of 54 kDa after electrophoresis on a 10% polyacrylamide gel in the presence of SDS with an additional Helicobacter antigen.

32. (Withdrawn) A method of preparing a pharmaceutical composition, said method comprising combining a composition consisting essentially of a *Helicobacter pylori* protein having a molecular weight that appears to be of the order of 54 kDa after electrophoresis on a 10% polyacrylamide gel in the presence of SDS with an adjuvant.

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33. (New) A composition consisting essentially of (i) a *Helicobacter pylori* membrane protein having a molecular weight of the order of 50, 32-35, or 30 kDa, and (ii) a pharmaceutically acceptable carrier or diluent, wherein said composition is in a form that is acceptable for administration to humans.

34. (New) A composition consisting of (i) a *Helicobacter pylori* membrane protein having a molecular weight of the order of 50, 32-35, or 30 kDa, (ii) an adjuvant, and (iii) a pharmaceutically acceptable carrier or diluent, wherein said composition is in a form that is acceptable for administration to humans.

35. (New) A composition consisting of (i) a *Helicobacter pylori* membrane protein having a molecular weight of the order of 50, 32-35, or 30, (ii) an additional Helicobacter polypeptide antigen, and (iii) a pharmaceutically acceptable carrier or diluent, wherein said composition is in a form that is acceptable for administration to humans.

D3

36. (New) A composition consisting essentially of (i) a *Helicobacter pylori* membrane protein having a molecular weight of the order of 50, 32-35, or 30 kDa, (ii) an adjuvant, and (iii) an additional Helicobacter polypeptide antigen, wherein said composition is in a form that is acceptable for administration to humans.

37. (New) A composition consisting essentially of (i) a *Helicobacter pylori* membrane protein having a molecular weight of the order of 50, 32-35, or 30 kDa, (ii) an adjuvant, (iii) an additional Helicobacter polypeptide antigen, and (iv) a pharmaceutically acceptable carrier or diluent, wherein said composition is in a form that is acceptable for administration to humans.

38. (New) A composition consisting essentially of (i) a *Helicobacter pylori* protein having a molecular weight of the order of 54 kDa, (ii) an additional Helicobacter polypeptide

antigen, and (iii) a pharmaceutically acceptable carrier or diluent, wherein said composition is in a form that is acceptable for administration to humans.

39. (New) A composition consisting essentially of (i) a *Helicobacter pylori* protein having a molecular weight of the order of 54 kDa, (ii) an additional Helicobacter polypeptide antigen, and (iii) an adjuvant, wherein said composition is in a form that is acceptable for administration to humans.

40. (New) A composition consisting essentially of (i) a *Helicobacter pylori* protein having a molecular weight of the order of 54 kDa, (ii) an additional Helicobacter polypeptide antigen, (iii) an adjuvant, and (iv) a pharmaceutically acceptable carrier or diluent, wherein said composition is in a form that is acceptable for administration to humans.

41. (New) A *Helicobacter pylori* protein in a substantially purified form, wherein said protein has a molecular weight of the order of 50, 32-35, or 30 kDa.